

Claims

1. An orally administrable composition for the photoprotection of the skin which comprises a photoprotecting effective amount of i) at least one probiotic lactic acid bacterium or a culture supernatant thereof, and ii) at least one carotenoid or derivative, included into an orally acceptable carrier.
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2. A composition according to claim 1, in which the lactic acid bacterium is selected from the group consisting of Lactic acid bacteria, preferably *Lactobacilli* and/or *Bifidobacteria*.
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3. A composition according to claim 1 or 2, in which the lactic acid bacterium is *Lactobacillus johnsonii*, *Lactobacillus reuteri*, *Lactobacillus rhamnosus*, *Lactobacillus paracasei*, *Lactobacillus casei* or *Bifidobacterium bifidum*, *Bifidobacterium breve*, *Bifidobacterium longum*, *Bifidobacterium animalis*, *Bifidobacterium lactis*, *Bifidobacterium infantis*, *Bifidobacterium adolescentis*, *Bifidobacterium pseudocatenulatum*, or a mixture thereof.
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4. A composition according to one of claims 1 to 3, in which the lactic acid bacterium is CNCM I-1225, CNCM I-2116, CNCM I-2168 or CNCM I-2170.
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5. A composition according to one of claims 1 to 4, in which the probiotic lactic acid bacterium is included into the carrier in a live form, semi-active or in deactivated form, preferably as a lyophilized powder attention.
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6. A composition according to one of claims 1 to 5, wherein the carotenoid is a carotenoid with or without provitamin A activity, such as β -carotene, γ -carotene, α -carotene, lycopene, zeaxanthine and luteine, or a mixture thereof.
7. A composition according to one of claims 1 to 6, wherein the carrier is a food or a pharmaceutical product, or a nutritional supplement for oral administration.
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8. A composition according to claim 6, wherein the food or pharmaceuticals carriers are milk, yoghurt, curd, cheese, fermented milks, milk based fermented products, ice-creams, fermented cereal based products, milk based powders, infant formulae or tablets, liquid suspensions, dried oral supplement, wet oral supplement, dry-tube-feeding.
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9. A composition according to claim 7, wherein the nutritional supplement for oral administration may be in capsules, soft capsules, tablets, pastes or pastilles, gums, or drinkable solutions or emulsions.
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10. A composition according to one of claim 1 to 9, which further comprises a yeast extract or a bioactive molecule.
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11. Use of a photoprotecting effective amount of at least one probiotic lactic acid bacterium or a culture supernatant thereof and at least one carotenoid, included into an orally acceptable carrier, for preparing an orally administrable composition for the protection of the skin against solar radiations and attenuating or preventing all related skin disorders.
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12. The use according to claim 11, in which the lactic acid bacterium is *Lactobacillus johnsonii*, *Lactobacillus reuteri*, *Lactobacillus rhamnosus*, *Lactobacillus paracasei*, *Lactobacillus casei* or *Bifidobacterium bifidum*, *Bifidobacterium breve*, *Bifidobacterium longum*, *Bifidobacterium animalis*, *Bifidobacterium lactis*, *Bifidobacterium infantis*, *Bifidobacterium adolescentis*, *Bifidobacterium pseudocatenulatum*, or a mixture thereof.
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13. The use according to claim 11 or 12, wherein the lactic acid bacterium is CNCM I-1225, CNCM I-2116, CNCM I-2168, CNCM I-2170 or ATCC 27536.

14. The use according to one of claims 11 to 13, wherein the probiotic lactic acid bacterium is present in the carrier in an amount of from about 10^5 to 10^{12} cfu/ g carrier.

5 15. The use according to one of claims 11 to 13, wherein the carotenoid is present in the carrier in an amount of from $10^{-12}\%$ to 20% by weight.

10 16. A method for improving the photoprotective function of the skin, which comprises the step of orally administering to the individual a composition comprising the combination of i) at least one probiotic lactic acid bacteria or a culture supernatant thereof, and ii) at least one carotenoid or derivative, in an orally acceptable carrier.

15 17. A method according to claim 16, in which the composition is according to one of claims 1 to 10.